Support for Amendments and Additional Claims

The support for the original Claims 1-3 issued in the '233 patent find support in the original application as filed.

The support for each element of the newly added Claims 4-13 are shown by the following tables:

Claim 4

Claim Elements	Support in the Original Specification and/or the Drawing Figures
4. (New) A transmitter used in a CDMA mobile communication system, comprising:	At least in col. 6, lines 37-61; FIG. 7.
a pilot channel transmit unit which is configured to transmit a pilot signal in a spread spectrum formation; and	At least in col. 6, lines 44-56; FIG. 7, element 40.
traffic channel transmit units which are configured respectively to transmit data signals in respective traffic channels,	At least in col. 6, lines 44-47; col. 6, line 62 to col. 7, line 11; FIG. 7, element 41_1, 41_2, ... 41_n.
wherein the pilot channel transmit unit is configured to transmit the pilot signal intermittently;	At least in col. 6, lines 57-60; col. 7, lines 14-35; FIG. 8.
a start timing of the pilot signal is offset from a start timing of a pilot signal transmitted by another transmitter in said CDMA mobile communication system; and	At least in col. 7, lines 26-45; FIG. 9 (see the "pilot signal transmission timing" of the based stations 21, 22, 23, and 24).
said pilot signal whose start timing is offset has a period shorter than an interval at which said pilot signal whose start timing is offset is transmitted.	At least in col. 7, lines 15-21; FIG. 9.

Claim 5

Claim Elements	Support in the Original Specification and/or the Drawing Figures
5. (New) A transmitter used in a CDMA mobile communication system, comprising:	At least in col. 6, lines 37-61; FIG. 7.
a pilot channel transmit unit which is configured to transmit a first pilot signal intermittently in a spread spectrum formation; and	At least in col. 6, lines 44-56; FIG. 7, element 40.
traffic channel transmit units that are configured respectively to transmit data signals in respective traffic channels,	At least in col. 6, lines 44-47; col. 6, line 62 to col. 7, line 11; FIG. 7, element 41_1, 41_2, ... 41_n.
wherein the pilot channel transmit unit is configured to start to transmit the first pilot signal at a different timing from a timing at which another pilot channel transmitter in said CDMA mobile communication system starts to transmit a second pilot signal, and	At least in col. 7, lines 26-45; FIG. 9 (see the "pilot signal transmission timing" of the based stations 21, 22, 23, and 24).
said first pilot signal has a period shorter than an interval at which said first pilot signal is transmitted.	At least in col. 7, lines 15-21; FIG. 9.

Claim 6

Claim Elements	Support in the Original Specification and/or the Drawing Figures
6. (New) A receiver for use in a CDMA mobile communication system, comprising:	At least in col. 7, lines 47-69; FIG. 10, and also at least in col. 10, lines 9-18; FIG. 13.
a pilot channel receive unit that receives pilot signals transmitted by transmitters in said CDMA mobile communication system,	At least in col. 7, lines 56-69; FIG. 10, element 44, and also at least in col. 13, lines 13-16; FIG. 13, element 44A.
wherein a start timing of the pilot signals transmitted by different transmitters are offset from each other, and	At least in col. 8, lines 3-6; FIG. 11A-11E.
each pilot signal has a period shorter than an interval at which each pilot signal is transmitted.	At least in col. 7, lines 15-21; col. 8, lines 16-19; FIGS. 9 and 11A-11E.

Claim 7

Claim Elements	Support in the Original Specification and/or the Drawing Figures
7. (New) A receiver for use in a CDMA mobile communication system, comprising:	At least in col. 7, lines 47-69; FIG. 10, and also at least in col. 10, lines 9-18; FIG. 13.
a pilot channel receive unit which receives pilot signals transmitted by transmitters in said CDMA mobile communication system,	At least in col. 7, lines 56-69; FIG. 10, element 44, and also at least in col. 13, lines 13-16; FIG. 13, element 44A.
wherein the pilot signals start to be transmitted at different timing from each other, and	At least in col. 8, lines 3-6; FIG. 11A-11E.
each pilot signal has a period shorter than an interval at which each pilot signal is transmitted.	At least in col. 7, lines 15-21; col. 8, lines 16-19; FIGS. 9 and 11A-11E.

Claim 8, 11, 12, and 13

Claim Elements	Support in the Original Specification and/or the Drawing Figures
(New) A CDMA mobile communication system, comprising:	At least in col. 6, lines 37-61; FIG. 7, and at least in col. 7, lines 47-69; FIG. 10; col. 10, lines 9-18; FIG. 13.
a transmitter [as claimed in claim 4]; or a transmitter [as claimed in claim 5]; and	At least in col. 6, lines 37-61; FIG. 7.
a receiver [as claimed in claim 6]; or a receiver [as claimed in claim 7].	At least in col. 7, lines 47-69; FIG. 10, and also at least in col. 10, lines 9-18; FIG. 13.

Claim 9

Claim Elements	Support in the Original Specification and/or the Drawing Figures
9. (New) A CDMA mobile communication method in a CDMA mobile communication system, comprising the steps of:	At least in col. 6, lines 44-56; FIG. 7, element 40, and at least in col. 7, lines 47-69; FIG. 10, and also at least in col. 10, lines 9-18; FIG. 13, and at least in col. 8, line 37 to col. 10, line 6.
a) transmitting, on transmit sides, pilot signals in a spread spectrum formation intermittently; and	At least in col. 6, lines 44-56; FIG. 7, element 40.
b) receiving, on a receive side, pilot signals transmitted by transmitters in said CDMA mobile communication system,	At least in col. 7, lines 47-69; FIG. 10, and also at least in col. 10, lines 9-18; FIG. 13, and at least in col. 8, line 37 to col. 10, line 6.
wherein a start timing of a pilot signal is offset from a start timing of another pilot signal transmitted by another transmitter in said CDMA mobile communication system, and	At least in col. 7, lines 26-45; FIG. 9 (see the "pilot signal transmission timing" of the based stations 21, 22, 23, and 24).
said pilot signal whose start timing is offset has a period shorter than an interval at which said pilot signal whose start timing is offset is transmitted.	At least in col. 7, lines 15-21; FIG. 9.

Claim 10

Claim Elements	Support in the Original Specification and/or the Drawing Figures
10. (New) A CDMA mobile communication method in a CDMA mobile communication system, comprising the steps of:	At least in col. 6, lines 44-56; FIG. 7, element 40, and at least in col. 7, lines 47-69; FIG. 10, and also at least in col. 10, lines 9-18; FIG. 13, and at least in col. 8, line 37 to col. 10, line 6.
a) transmitting, on transmit sides, pilot signals in a spread spectrum formation intermittently; and	At least in col. 6, lines 44-56; FIG. 7, element 40.
b) receiving, on a receive side, pilot signals transmitted by transmitters in said CDMA mobile communication system,	At least in col. 7, lines 47-69; FIG. 10, and also at least in col. 10, lines 9-18; FIG. 13, and at least in col. 8, line 37 to col. 10, line 6.
wherein the pilot signals start to be transmitted at different timing from each other, and	At least in col. 7, lines 26-45; FIG. 9 (see the "pilot signal transmission timing" of the based stations 21, 22, 23, and 24).
each pilot signal has a period shorter than an interval at which each pilot signal is transmitted.	At least in col. 7, lines 15-21; FIG. 9.

Additional support for these newly added claims may also be found in other parts of the original Specification and drawing figures as filed with the application.

Respectfully submitted,

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Listing of Claims

1. (original) A transmitter used in a CDMA mobile communication system comprising:

a pilot transmit unit further comprising:

a pilot data generator which generates pilot data;

a first modulator which modulates the pilot data;

a second modulator which spreads a spectrum of modulated pilot data from the first modulator to thereby generate a pilot signal; and

a timing generator which generates a timing signal applied to at least one of the pilot data generators and the first and second modulators so that the pilot signal is intermittently transmitted; and

traffic channel transmit units which respectively transmit data signals in respect of traffic channels.

2. (original) A transmitter used in a CDMA mobile communication system as claimed in claim 1, wherein said pilot signal has a period shorter than an interval in which the pilot signal is intermittently transmitted.

3. (original) A receiver used in a CDMA mobile communication system comprising:

a pilot channel receive unit which demodulates pilot signals respectively transmitted intermittently in a spread spectrum formation by transmitters, and detects from the pilot signals, a timing for a traffic channel demodulation; and

a traffic channel receive unit which demodulates data at the timing detected by said pilot channel receive unit; and the timing detected by comparing peaks of the

pilot signals intermittently transmitted, the timing for the traffic channel demodulation corresponding to a greatest one of the peaks.

4. (New) A transmitter used in a CDMA mobile communication system, comprising:

a pilot channel transmit unit which is configured to transmit a pilot signal in a spread spectrum formation; and

traffic channel transmit units which are configured respectively to transmit data signals in respective traffic channels,

wherein the pilot channel transmit unit is configured to transmit the pilot signal intermittently; a start timing of the pilot signal is offset from a start timing of a pilot signal transmitted by another transmitter in said CDMA mobile communication system; and said pilot signal whose start timing is offset has a period shorter than an interval at which said pilot signal whose start timing is offset is transmitted.

5. (New) A transmitter used in a CDMA mobile communication system, comprising:

a pilot channel transmit unit which is configured to transmit a first pilot signal intermittently in a spread spectrum formation; and

traffic channel transmit units that are configured respectively to transmit data signals in respective traffic channels,

wherein the pilot channel transmit unit is configured to start to transmit the first pilot signal at a different timing from a timing at which another pilot channel transmitter in said CDMA mobile communication system starts to transmit a second pilot signal, and said first pilot signal has a period shorter than an interval at which said first pilot signal is transmitted.

6. (New) A receiver for use in a CDMA mobile communication system, comprising:

a pilot channel receive unit that receives pilot signals transmitted by transmitters in said CDMA mobile communication system,

wherein a start timing of the pilot signals transmitted by different transmitters are offset from each other, and each pilot signal has a period shorter than an interval at which each pilot signal is transmitted.

7. (New) A receiver for use in a CDMA mobile communication system, comprising:

a pilot channel receive unit which receives pilot signals transmitted by transmitters in said CDMA mobile communication system,

wherein the pilot signals start to be transmitted at different timing from each other, and each pilot signal has a period shorter than an interval at which each pilot signal is transmitted.

8. (New) CDMA mobile communication method in a CDMA mobile communication system, comprising:

a transmitter, comprising:

a pilot channel transmit unit which is configured to transmit a pilot signal in a spread spectrum formation; and

traffic channel transmit units which are configured respectively to transmit data signals in respective traffic channels,

wherein the pilot channel transmit unit is configured to transmit the pilot signal intermittently; a start timing of the pilot signal is offset

from a start timing of a pilot signal transmitted by another transmitter in said CDMA mobile communication system; and said pilot signal whose start timing is offset has a period shorter than an interval at which said pilot signal whose start timing is offset is transmitted; and

a receiver, comprising:

a pilot channel receive unit that receives pilot signals transmitted by transmitters in said CDMA mobile communication system,

wherein a start timing of the pilot signals transmitted by different transmitters are offset from each other, and each pilot signal has a period shorter than an interval at which each pilot signal is transmitted.

9. (New) A CDMA mobile communication method in a CDMA mobile communication system, comprising the steps of:

a) transmitting, on transmit sides, pilot signals in a spread spectrum formation intermittently; and

b) receiving, on a receive side, pilot signals transmitted by transmitters in said CDMA mobile communication system,

wherein a start timing of a pilot signal is offset from a start timing of another pilot signal transmitted by another transmitter in said CDMA mobile communication system, and said pilot signal whose start timing is offset has a period shorter than an interval at which said pilot signal whose start timing is offset is transmitted.

10. (New) A CDMA mobile communication method in a CDMA mobile communication system, comprising the steps of:

a) transmitting, on transmit sides, pilot signals in a spread spectrum formation intermittently; and

b) receiving, on a receive side, pilot signals transmitted by transmitters in said CDMA mobile communication system,

wherein the pilot signals start to be transmitted at different timing from each other, and each pilot signal has a period shorter than an interval at which each pilot signal is transmitted.

11. (New) CDMA mobile communication method in a CDMA mobile communication system, comprising:

a transmitter, comprising:

a pilot channel transmit unit which is configured to transmit a pilot signal in a spread spectrum formation; and

traffic channel transmit units which are configured respectively to transmit data signals in respective traffic channels,

wherein the pilot channel transmit unit is configured to transmit the pilot signal intermittently; a start timing of the pilot signal is offset from a start timing of a pilot signal transmitted by another transmitter in said CDMA mobile communication system; and said pilot signal whose start timing is offset has a period shorter than an interval at which said pilot signal whose start timing is offset is transmitted; and

a receiver, comprising:

a pilot channel receive unit which receives pilot signals transmitted by transmitters in said CDMA mobile communication system,

wherein the pilot signals start to be transmitted at different timing from each other, and each pilot signal has a period shorter than an interval at which each pilot signal is transmitted.

12. (New) CDMA mobile communication method in a CDMA mobile communication system, comprising:

a transmitter, comprising:

a pilot channel transmit unit which is configured to transmit a first pilot signal intermittently in a spread spectrum formation; and

traffic channel transmit units that are configured respectively to transmit data signals in respective traffic channels,

wherein the pilot channel transmit unit is configured to start to transmit the first pilot signal at a different timing from a timing at which another pilot channel transmitter in said CDMA mobile communication system starts to transmit a second pilot signal, and said first pilot signal has a period shorter than an interval at which said first pilot signal is transmitted; and

a receiver, comprising:

a pilot channel receive unit that receives pilot signals transmitted by transmitters in said CDMA mobile communication system,

wherein a start timing of the pilot signals transmitted by different transmitters are offset from each other, and each pilot signal has a period shorter than an interval at which each pilot signal is transmitted.

13. (New) CDMA mobile communication method in a CDMA mobile communication system, comprising:

a transmitter, comprising:

a pilot channel transmit unit which is configured to transmit a first pilot signal intermittently in a spread spectrum formation; and

traffic channel transmit units that are configured respectively to transmit data signals in respective traffic channels,

wherein the pilot channel transmit unit is configured to start to transmit the first pilot signal at a different timing from a timing at which another pilot channel transmitter in said CDMA mobile communication system starts to transmit a second pilot signal, and said first pilot signal has a period shorter than an interval at which said first pilot signal is transmitted.

a receiver, comprising:

a pilot channel receive unit which receives pilot signals transmitted by transmitters in said CDMA mobile communication system,

wherein the pilot signals start to be transmitted at different timing from each other, and each pilot signal has a period shorter than

an interval at which each pilot signal is transmitted.